

CLAIMS

1. A titania nanotube having a length of 1 μm or more.
2. The titania nanotube according to Claim 1 the diameter
5 is 0.1 μm or less.
3. The titania nanotube according to Claim 1 or 2 wherein
the aspect ratio is 100 or more.
4. A sensor having the titania nanotube according to any
of Claims 1 to 3 and an electrode in which the titania nanotube
10 and the electrode are connected.
5. A method for producing a titania nanotube, comprising
a step of dispersing a titania powder in a sodium hydroxide aqueous
solution at a temperature of 60°C or more.
6. The method according to Claim 5 wherein the titania powder
15 has an average particle diameter of 50 nm or less.
7. The method according to Claim 5 or 6 wherein the amount
of the titania powder is 0.01 part by weight or more and 0.1
part by weight or less based on 100 parts by weight of a sodium
hydroxide aqueous solution.
- 20 8. The method according to any of Claims 5 to 7 wherein the
sodium hydroxide aqueous solution has a concentration of sodium
hydroxide of 1 M or more and 15 M or less.
9. The method according to Claim 8 wherein the sodium
hydroxide aqueous solution has a concentration of sodium
25 hydroxide of 3 M or more and 13 M or less.

10. The method according to Claim 9 wherein the sodium hydroxide aqueous solution has a concentration of sodium hydroxide of 7 M or more and 12 M or less.

11. The method according to any of Claims 5 to 10 wherein
5 dispersion is conducted at 90°C or more and 120°C or less.

12. The method according to any of Claims 5 to 11 wherein dispersion is conducted by stirring or irradiation with an ultrasonics.

13. The method according to Claim 12 wherein dispersion is
10 conducted by stirring.